marantz®

Model SP-50 User Guide

Dolby Surround Processor

ENGLISH
WARRANTY

For warranty information, contact your local Marantz distributor.

RETAIN YOUR PURCHASE RECEIPT

Your purchase receipt is your permanent record of a valuable purchase. It should be kept in a safe place to be referred to as necessary for insurance purposes or when corresponding with Marantz.

IMPORTANT

When seeking warranty service, it is the responsibility of the consumer to establish proof and date of purchase. Your purchase receipt or invoice is adequate for such proof.

FOR U.K. ONLY

This undertaking is in addition to a consumer's statutory rights and does not affect those rights in any way.

FRANÇAIS
GARANTIE

Pour des informations sur la garantie, contacter le distributeur local Marantz.

CONSERVER L'ATTESTATION D'ACHAT

L'attestation d'achat est la preuve permanente d'un achat de valeur. La conserver en lieu sûr pour s'y reporter aux fins d'obtention d'une couverture d'assurance ou de correspondance avec Marantz.

IMPORTANT

Pour l'obtention d'un service couvert par la garantie, il incombe au client d'établir la preuve de l'achat et d'en corroborer la date. Le reçu ou la facture constituent des preuves suffisantes.

DEUTSCH
GARANTIE

Bei Garantiefragen wenden Sie sich bitte an Ihren Marantz-Händler.

HEBEN SIE IHRE QUITTUNG GUT AUF

Die Quittung dient Ihnen als bleibende Unterlage für Ihren wertvollen Einkauf. Das Aufbewahren der Quittung ist wichtig, da die darin enthaltenen Angaben für Versicherungszwecke oder bei Korrespondenz mit Marantz angeführt werden müssen.

WICHTIG!

Bei Garantiefragen muß der Kunde eine Kaufunterlage mit Kaufsdatum vorlegen. Ihre Quittung oder Rechnung ist als Unterlage ausreichend.

NEDERLANDS
GARANTIE

Voor inlichtingen omtrent de garantie dient u zich tot uw plaatselijke Marantz handelaar te wenden.

UW KWITANTIE, KASSABON E.D. BEWAREN

Uw kwitantie, kassabon e.d. vormen uw bewijs van aankoop var een waardevol artikel en dienen op een veilige plaats bewaard te worden in verband met bijvoorbeeld verzekering of bij korrespondentie met Marantz.

BELANGRIJK

Bij een eventueel beroep op de garantie is het de verantwoordelijkheic van de konsument een gedateerd bewijs van aankoop te tonen. Uw kassabon of faktuur zijn voldoende bewijs.

ITALIANO
GARANZIA

Per informazioni sulla garazia consultate il certificato inserit nell'apparecchio.

CONSERVATE LA RICEVUTA D'ACQUISTO

La ricevuta di acquisto è la vostra documentazione permanente d un acquisto importante. Tenetela in luogo sicuro dove potete eventualmente consultarla.

IMPORTANTE

Per il servizio in garanzia, spetta al consumatore formire la prova e l'indicazione della data di acquisto. La ricevuta di acquisto o la fattura rappresentano, a tale scopo, una prova adeguata.

PORTUGUÊS
GARANTIA

Para informações sobre garantia, contactar o distribuidor Maranz local.

GUARDAR O RECIBO DE COMPRA

O recibo é o registo permanente da compra feita. Deve ser guardado num local seguro para ser apresentado em questões relacionadas com o seguro ou para o caso de contactar a Marantz.

IMPORTANTE

Ao procurar assistência técnica ao abrigo da garantia, é da responsabilidade do consumidor estabelecer a prova e data de compra. O recibo é prova adequada.

SVENSKA
GARANTI

För information om garantin, kontakta Marantz lokalagent.

SPAR KVITTOT

Kvittot är ett inköpsbevis på en värdefull vara. Det skall förvaras säkert och hänvisas till vid försäkringsfall eller vid korrespondens med Marantz.

VIKTIGT

För att garantin skall gälla är det kundens sak att framställa bevis om och datum för köpet. Kvitto eller faktura är tillräckligt bevis för detta.

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ENGLISH: This unit meets the requirements of EEC Recommandation 82/499.

FRANÇAIS: Cet appareil est conforme à la directive 82/499 de la CEE.

DEUTSCH: Dieses Gerät entspricht der EWG-Empfehlung 82/499.

NEDERLANDS: Dit apparaat voldoet de eisen van Aanbeveling EEG 82/499.

ITALIANO: Questo apparecchio è conforme ai requisti della direttiva CEE 82/499.

PORTUGUÊS: Esta unidade foi concebida e manufacturada em conformidade com a Recommendaçâo 82/499 da Comunidade Económica Europeia.

SVENSKA: Denna apparat överenstämmer med bestämmelserna i EEC 82/499.

ENGLISH

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FOREWORD

This section must be read before any connection is made to the mains supply.

WARNINGS

Do not expose the equipment to rain or moisture.

Do not remove the cover from the equipment.

Do not push anything inside the equipment through the ventilation holes.

Do not handle the mains lead with wet hands.

EQUIPMENT MAINS WORKING SETTING

Your Marantz product has been prepared to comply with the householdpower and safety requirements that exist in your area. This product has a two position voltage selector (220V/240V) on the rear panel. Check that the mains working voltage setting on the model in your possession matches the mains voltage available in your area.

MAINS PLUG CONNECTIONS FOR EQUIPMENT SOLD IN THE U.K.

The wires in the mains lead are coloured in accordance with the following code:

- brown is the live wire
- blue is the neutral wire

Because the colours of these wires may not correspond with the terminal identification in your plug, proceed as follows. Connect the:

- brown wire to the terminal marked 'L' or coloured brown or red
- blue wire to the terminal marked 'N' or coloured blue or black.

When using a 13A plug conforming to BS1363, use a 3A fuse. For other plugs, use a 5A or lower rated fuse in the plug, adaptor or at the distribution board.

DO NOT CONNECT EITHER WIRE TO THE EARTH TERMINAL IN THE PLUG WHICH IS MARKED BY THE LETTER E OR BY THE SAFETY EARTH SYMBOL OR COLOURED GREEN OR GREEN - AND - YELLOW.

COPYRIGHT

Recording and playback of any material may require consent. For further information refer to the following:

- Copyright Act 1956
- Dramatic and Musical Performers Act 1958
- Performers Protection Acts 1963 and 1972
- any subsequent statutory enactments and orders.

ABOUT THIS USER GUIDE

Refer to the Figures on pages 64 - 75 at the rear of this user guide. The callout numbers on the Figures correspond to those found in the text. All references to the connections and controls that are printed in **BOLD** type are as they appear on the unit.

PRECAUTIONS

The following precautions should be taken when operating the equipment.

GENERAL PRECAUTIONS

When setting the equipment ensure that:

- the ventilation holes are not covered
- air is allowed to circulate freely around the equipment
- it is on a vibration free surface
- it will not be exposed to interference from an external source
- it will not be exposed to excessive heat, cold, moisture or dust
- it will not be exposed to direct sunlight
- it will not be exposed to electrostatic discharges

In addition, never place heavy objects on the equipment.

If a foreign body or water does enter the equipment, contact your nearest dealer or service center.

Do not pull out the plug by pulling on the mains lead, hold the plug.

It is advisable when leaving the house, or during a thunderstorm, to disconnect the equipment from the mains supply.

FEATURES

- Built-in Dolby Pro Logic surround decoder, providing the sensation of actually being in a theater or concert hall.
- Built-in 30-watt power amplifier for surround use, making it easy to set up a surround system.
- Input and output terminals designed with the ability to handle future developments, facilitating future system expansion.
- Digital delay circuitry providing low-noise, high-quality surround sound.

SURROUND MODE SELECTION

This unit is provided with three surround modes for use in creating the surround ("being-there") effect. Select the appropriate surround mode according to the sound source and the conditions of your listening room.

DOLBY SURROUND MODE

This surround mode is for use with audio/video software carrying the DOLBY SURROUND mark. This unit employs a Dolby Pro Logic surround decoder which operates the same way as the decoders used in movie theaters.
One of the main features of Dolby Pro Logic is the use of directionality-emphasizing circuitry, which enables the position and movement of sound to be expressed very naturally, and provides the listener with a surround feeling similar to actually being in a movie theater.

HALL SURROUND MODE

In actual concert halls, various complex sounds such as sounds reflected from the walls and ceiling are intermingled with the main sound coming directly from the stage. This mode provides a surround sound which closely matches the rich tone of a concert hall.
Use this surround mode when playing audio/video input source which is not encoded with the Dolby Surround system.

MATRIX SURROUND MODE

This mode provides a natural, expansive feeling regardless of the type of music being played.

NOTE:
It is not possible for the surround effect to be obtained when playing monaural sources.

CONNECTIONS (Figure 1 and 2)

Figure 1 shows the connections required with this unit for a minimum system configuration which will allow you to enjoy Dolby Pro Logic surround.
Figure 2 shows the connections for a full-fledged system configuration centering around this unit and using three stereo amplifiers or more.

NOTE:
Be sure to connect the wires while the POWER switches are OFF. If the wires are connected with the POWER switch ON, a malfunction may occur.

CONTROLS AND CONNECTORS (Figure 5)

① LINE INPUT JACKS

Connect these jacks to the recording output (REC) jacks of the integrated amplifier connected to the front speakers.
When using this unit, set the integrated amplifier's tape monitor switch to ON.

② LINE THROUGH OUT JACKS

These jacks are not normally used.
The signal output from these jacks is the same as the signal input to the LINE INPUT jacks, so the jacks can be connected to a tape deck for recording purposes or to another amplifier.

③ OUTPUTS: FRONT

Connect these jacks to the tape input (PLAY) jacks of the integrated amplifier connected to the front speakers.
When using this unit, set the tape monitor switch on the integrated amplifier to ON.

④ OUTPUTS: REAR 1/2

Connect these jacks to the AUX input jacks of the integrated amplifier connected to the surround speakers.
Two sets of these jacks are provided, allowing you to connect an additional surround-use amplifier for an expanded surround system.

⑤ OUTPUTS: CENTER 1/2

Connect one of these jacks to one of the AUX input jacks of the integrated amplifier connected the center speaker (see Figure 2). Be sure that the center speaker is connected to the same channel as that of the connected AUX input jack.
Since the signal output from the **CENTER** jacks is monaural, use only one of the jacks (either 1 or 2) when only one center speaker is used.
When two center speakers are used, use a stereo amplifier and ideally, a configuration where the two center speakers are located on both sides of the television.
When placing speakers close to the television, be sure to use magnetically-shielded speakers.
When using the television's built-in speaker as the center speaker (Figure 1), connect one of the **CENTER** output jacks of this unit to the television's audio input jack and set the television's input switch to VIDEO.
Connect the television's video input jack to the video output jack of a video component such as VTR or a videodisc player.

⑥ CENTER CHANNEL SWITCH (NORMAL/PHANTOM)

Set this switch to **NORMAL** when a center speaker is used and to **PHANTOM** when a center speaker is not used.
The switch is set to **NORMAL** when the unit is shipped from the factory.
By setting this switch to **PHANTOM**, Dolby Pro Logic surround can be enjoyed even when a center speaker is not connected. At this setting, the audio signal intended for the center speaker is divided and sent equally to the front (left and right) speakers, so that the sound image remains positioned in the center.

⑦ SPEAKER OUTPUT TERMINALS

This unit is equipped with a built-in power amplifier for use in driving surround output signals.
Use of this amplifier makes it easy to enjoy Dolby Pro Logic surround.
Two sets of surround speakers can be connected to these terminals.

⑧ AC POWER CORD

Connect the AC power cord to a household AC power outlet.

⑨ VOLTAGE SELECTOR

Set the **VOLTAGE SELECTOR** to match the voltage of the AC power supplied in your area.

⑩ POWER SWITCH

Press this switch once to turn the power ON, and press it again to turn the power OFF.
The indicator above the switch lights when the power is ON.

⑪ REAR LEVEL CONTROL

For adjusting the volume level of sound output from the surround (rear) speakers.

⑫ CENTER LEVEL CONTROL

For adjusting the volume level of sound output from the center speaker.

⑬ EFFECT SELECTOR

For switching between Hall surround and Matrix surround.

⑭ DD SURROUND/HALL/MATRIX SWITCH

For selecting Dolby Pro Logic surround or Hall/Matrix surround.

⑮ BY-PASS SWITCH

When this switch is pressed ON (to BY-PASS), the system reverts to normal stereo operation and the sound is not effected by this unit's surround circuitry.
This switch can be used to check the surround effect by comparing the surround sound to normal stereo sound.

⑯ TEST TONE SWITCH

When this switch is pressed (to ON), a test signal is sent to each speaker in succession.
Use this switch when adjusting the overall volume balance.

⑰ CENTER MODE: WIDE SWITCH

Press this switch when using a large center speaker.

⑱ CENTER MODE: OFF/CAL SWITCH

Use this switch when adjusting the Dolby surround effect.
For the adjustment procedure, see page 8.

⑲ INPUT CAL (INPUT CALIBRATION) CONTROLS

Use these controls when adjusting the input level and balance.
For the adjustment procedure, see page 8.

⑳ MASTER VOLUME CONTROL

For adjusting the system's overall volume level.
The volume levels of the front speakers, center speaker, and surround (rear) speakers are adjusted simultaneously with this volume control.

DOLBY SURROUND

SPEAKER INSTALLATION

• Minimum system configuration (Figure 1 and 3)

With this configuration, Dolby Pro Logic surround can be enjoyed easily using only a 30-watt (approx.) stereo integrated amplifier, two front speakers, and two surround speakers.
As long as your television has an external input (video input), the television can be used in the system even if it is not a stereo model.
The television's built-in speaker is used as the center speaker. Also, for optimum surround performance and ease of adjustment, it is best if the four (2 front + 2 rear) speakers are identical or have similar characteristics.
If one pair of speakers is different in size than the other pair, use the largest pair of speakers for the front speakers. (Figure 3)

• Full-fledged system configuration (Figure 2 and 4)

Three stereo amplifiers and six speakers are required for this arrangement, which will allow you to enjoy the full sensation of full-fledged Dolby Pro Logic surround.
Ideally, all six of the speakers should be identical or have similar characteristics. However, if differences exist in size and/or characteristics, use the best pair of speakers (the speakers with the best low-frequency sound reproduction characteristics) for the front speakers, and use the smallest pair of speakers for the center speakers.
Also, be sure that the speakers used for the center speakers are magnetically-shielded speakers. If the center speakers are not magnetically shielded, the magnetism of the speakers may adversely affect the television picture by causing color irregularities. (Figure 4)

It is often not possible to position the speakers in the ideal arrangement shown in the diagram. However, even if that is the case, the Dolby Pro Logic surround system still makes it possible to obtain precise sound image positioning and a rich, expansive feeling.
Especially with the surround speakers, you do not have to place the speakers on the same floor or level as the front speakers, but you can mount them on the walls or ceiling.

HALL SURROUND AND MATRIX SURROUND

Surround sound can be obtained even when playing stereo sources other than Dolby Surround sources. Use the Hall Surround and Matrix Surround modes with these sources for surround listening enjoyment.

- Press the DD SURROUND/HALL/MATRIX switch to select HALL/MATRIX.
- Next, set the EFFECT selector to HALL or MATRIX.
  At the HALL (Hall Surround) setting, the surround speakers output a stereo combined signal (L+R).
  At the MATRIX (Matrix Surround) setting, the surround speakers output a stereo differentiated signal (L-R).
  At both settings, a digital delay effect is used to delay the surround signal by 20 ms in relation to the front channel signal.
- When this unit is set to HALL or MATRIX, no sound is output from the center channel.
- By setting this unit to MATRIX (Matrix Surround) and switching off the power to the front-speaker amplifier, it is possible to eliminate the center-positioned sound component (vocals, etc.) from the surround speakers to a certain extent, allowing the system to be used for sing-along enjoyment such as karaoke.

OPERATION PROCEDURES

ADJUSTING THE SURROUND LEVEL

• Minimum System Configuration (Figure 1)

1. Confirm that the CENTER CHANNEL switch on the unit's back panel is set to NORMAL.
2. Switch on the power to the integrated amplifier, this unit, and the television.
3. Set both the REAR LEVEL and CENTER LEVEL controls to their maximum (MAX) positions.
4. Set the integrated amplifier's tape monitor switch to the "monitor" position.
5. Switch the television to its external input (video input).
6. Set the volume controls on the integrated amplifier and the television to around their halfway positions.
7. Press the TEST TONE switch on this unit.
8. Gradually increase the MASTER VOLUME control. The test signal tone is output sequentially from the left, center, right, and surround speakers at 1.5-second intervals.
9. Adjust the REAR LEVEL and CENTER LEVEL controls so that the volume levels of the test signal tones output from the left, center, right, and surround speakers are identical.
10. After the adjustment is completed, press the TEST TONE switch again so that the test signal tone stops.

• Full-fledged System Configuration (Figure 2)

1. Confirm that the CENTER CHANNEL switch on the unit's back panel is set to NORMAL.
2. Switch on the power to this unit, the television, and each of the integrated amplifiers used for the front, center, and surround speakers.
3. Set both the REAR LEVEL and CENTER LEVEL controls to their maximum (MAX) positions.
4. Set the tape monitor switch on the integrated amplifier used for the front speakers to the "monitor" position.
5. Set the volume controls on each of the integrated amplifiers to around their halfway positions.
6. Press the TEST TONE switch on this unit.
7. Gradually increase the MASTER VOLUME control. The test signal tone is output sequentially from the left, center, right, and surround speakers at 1.5-second intervals.
8. Adjust the REAR LEVEL and CENTER LEVEL controls on this unit and the volume control on the integrated amplifier used for the front speakers so that the volume levels of the test signal tones output from the left, center, right, and surround speakers are identical.
9. After the adjustment is completed, press the TEST TONE switch again so that the test signal tone stops.

ADJUSTING THE INPUT LEVEL AND INPUT BALANCE

• Minimum System Configuration (Figure 1)

Normally, accurate input level and balance can be obtained by setting both the left and right INPUT CAL controls to their center click-stop positions. However, if the indicators above the INPUT CAL controls do not fully light (low input level) or remain lit (high input level), perform the following adjustment.

1. Play a VTR or a CD, CDV, LD (LV) player so that both video and audio are output.
2. During a maximum volume scene, adjust the LEFT or RIGHT INPUT CAL control (LEFT in this example) so that the indicator above the control lights.

3. Press the CENTER MODE OFF/CAL switch.
4. Next, during a dialogue scene, adjust the INPUT CAL control which was not adjusted in step 2 (RIGHT in this example) so that the dialogue sound heard from the front speakers is minimized.
5. After the adjustment is completed, press the CENTER MODE OFF/CAL switch again to return it to its original position.
6. Adjust the input level and input balance whenever a different input source is used.

The adjustment is completely finished at this point.
Set the MASTER VOLUME control to an appropriate level and enjoy the program.
Also, other than the MASTER VOLUME control on this unit, do not adjust any of the volume controls on this unit or on any other amplifier in the system.

- When using an amplifier with tone controls, it is sometimes beneficial to the overall surround effect to use the tone controls to boost the low frequency sound.

- **Full-fledged System Configuration (Figure 2)**

Normally, accurate input level and balance can be obtained by setting both the left and right INPUT CAL controls to their center click-stop positions.
However, if the indicators above the INPUT CAL controls do not fully light (low input level) or remain lit (high input level), perform the following adjustment.

1. Play a VTR or a CD, CDV, LD (LV) player so that both video and audio are output.
2. During a maximum volume scene, adjust the LEFT or RIGHT INPUT CAL control (LEFT in this example) so that the indicator above the control lights.
3. Press the CENTER MODE OFF/CAL switch.
4. Next, during a dialogue scene, adjust the INPUT CAL control which was not adjusted in step 2 (RIGHT in this example) so that the dialogue sound heard from the front speakers is minimized.
5. After the adjustment is completed, press the CENTER MODE OFF/CAL switch again to return it to its original position.
6. Adjust the input level and input balance whenever a different input source is used.

The adjustment is completely finished at this point.
Set the MASTER VOLUME control to an appropriate level and enjoy the program.
Also, other than the MASTER VOLUME control on this unit, do not adjust any of the volume controls on this unit or on any other amplifier in the system.

- When using an amplifier with tone controls, it is sometimes beneficial to the overall surround effect to use the tone controls to boost the low frequency sound.

CARE AND MAINTENANCE

This section describes the care and maintenance tasks that must be performed to optimize the operation of your Marantz equipment.

CLEANING OF EQUIPMENT'S EXTERNAL SURFACES

The exterior finish of your SP-50 will last indefinitely with proper care and cleaning. Never use scouring pads, steel wool, scouring powders or harsh chemical agents (e.g., lye solution), alcohol, thinners, benzine, insecticide or other volatile substance as these will mar the finish of the equipment. Likewise, never use cloths containing chemical substances. If the equipment gets dirty, wipe the external surfaces with a soft, lit-free cloth.

If the equipment becomes heavily soiled:

- dilute some washing up liquid in water, in a ratio of one part detergent to six parts water
- dip a soft, lint free cloth in the solution and wring the cloth out until it is damp
- wipe the equipment with the damp cloth
- dry the equipment by wiping it with a dry cloth

FUSE REPLACEMENT

If a fuse blows, unplug the equipment from the mains supply. Replace the fuse only with a fuse of the same type and rating. Replacing the fuse with one of a higher rating or a slower action will not protect the equipment and will invalidate the warranty. If the replacement fuse blows again after the equipment is turned on, the equipment should be taken to an authorized service facility.

REPAIRS

Only the most component and qualified service technicians should be allowed to service the equipment. The Marantz company and its factory-trained warranty station personnel have the knowledge and special facilities needed for repair and calibration of this precision equipment. After the warranty period has expired, repairs will be performed for a charge if the equipment can be returned to normal operation.

In the event of difficulty, refer to your dealer or write directly to the nearest location to you that is listed on the Marantz Authorized Service Station list. If writing, please include the model and serial number of the equipment together with a full description of what you think is abnormal about the equipment's behavior.

TROUBLESHOOTING

GENERAL MALFUNCTION

If the equipment malfunctions, this may be because an electrostatic discharge or mains interference has corrupted the information in the equipment memory circuits. Therefore:

- disconnect the plug from the mains supply
- after waiting at least three minutes, reconnect the plug to the mains supply
- re-attempt to operate the equipment.

PARTICULAR MALFUNCTION

What seems to be a serious malfunction is often due to a simple operation mistake. In case of any trouble, please check the following items first.
If the trouble cannot be located and after the check, consult your dealer or nearest MARANTZ service agent.

Unit does not operate and indicators do not light.

- Is the power cord properly plugged into an AC power outlet?
- Has the fuse blown? If it has, unplug the power cord and then replace the fuse.

The indicators light but the unit does not operate.

- Check the setting position of each of the unit's controls such as the MASTER VOLUME, EFFECT, and LEVEL volume controls and the INPUT CAL controls.

No sound is output from the surround (rear) channel.

- Is the input source a monaural source? Check the source one more time. The source must be a stereo source for the surround effect to be obtained.
- Is the BY-PASS switch pressed on? The BY-PASS switch must be set to OFF for the surround circuitry to be operative.
- Is the REAR LEVEL control set to its minimum position? If so, rotate the control clockwise to increase the volume level of the surround (rear) speakers.

ENGLISH

SYSTEM CONNECTIONS DIAGRAMS

Figure 1. Minimum System Configuration

① Stereo integrated amplifier
② Front speakers
③ Television (center speaker)
④ Surround speakers

Figure 2. Full-fledged System Configuration

① Integrated amplifier (for front speakers)
② Front speakers
③ Stereo or monaural integrated amplifier (for center speaker)
④ Center speaker
⑤ Integrated amplifier or stereo power amplifier (for surround speakers)
⑥ Surround speakers
⑦ Integrated amplifier or stereo power amplifier (for expansion surround speakers)
⑧ Expansion surround speakers

FRANÇAIS

Schéma des connexions du système

Figure 1. Configuration d'un système minimal

① Amplificateur intégré stéréo
② Haut-parleurs avant
③ Téléviseur (haut-parleur central)
④ Haut-parleurs à son ambiant

Figure 2. Configuration d'un système complet

① Amplificateur intégré (pour haut-parleurs avant)
② Haut-parleurs avant
③ Amplificateur intégré stéréo ou monaural (pour haut-parleur central)
④ Haut-parleur central
⑤ Amplificateur intégré ou amplificateur de puissance stéréo (pour haut-parleurs à son ambiant)
⑥ Haut-parleurs à son ambiant
⑦ Amplificateur intégré ou amplificateur de puissance stéréo (pour haut-parleurs à son ambiant supplémentaires)
⑧ Haut-parleurs à son ambiant supplémentaires

TECHNICAL SPECIFICATIONS (DIN)

Power output (Rear-EIAJ 6 ohms)	30 W
THD at half rated outputs	0.03%
S/N ratio (A weighted)	90 dB
Frequency response	40 Hz – 30 kHz
Power requirements N, T and A versions	220/240 V AC, 50/60 Hz, 65 W
E version (4 voltages)	110/120/220/240 V AC, 50/60 Hz, 65 W
Dimensions	
Panel width	420 mm
Panel height	60 mm
Depth	200 mm
Weight	
Unit alone	3.2 kg

ENGLISH

Figure 5

① Line Input Jacks
② Line Through Out Jacks 1/2
③ Outputs: Front
④ Outputs: Rear 1/2
⑤ Outputs: Center 1/2
⑥ Center Channel Switch (Normal/ Phantom)
⑦ Speaker Output Terminals
⑧ AC Power Cord
⑨ Voltage Selector
⑩ Power Switch
⑪ Rear Level Control
⑫ Center Level Control
⑬ Effect Selector
⑭ DD Surround/Hall/Matrix Switch
⑮ By-pass Switch
⑯ Test Tone Switch
⑰ Center Mode: Wide Switch
⑱ Center Mode: Off/Cal Switch
⑲ Input Cal (Input Calibration) Control
⑳ Master Volume Control

FRANÇAIS

Figure 5

① Prises d'entrée de ligne
② Prises de sortie directe de ligne 1/2
③ Sorties: Avant
④ Sorties: Arrière 1/2
⑤ Sorties: Centre 1/2
⑥ Sélecteur de canal central (Normal/ Phantom)
⑦ Bornes de sortie de haut-parleur
⑧ Cordon d'alimentation secteur
⑨ Sélecteur de tension
⑩ Interrupteur d'alimentation
⑪ Réglage de niveau arrière
⑫ Réglage de niveau central
⑬ Sélecteur d'effet
⑭ Sélecteur DD Surround/ Hall/Matrix
⑮ Interrupteur de dérivation
⑯ Interrupteur de tonalité d'essai
⑰ Sélecteur de mode central: Wide
⑱ Sélecteur de mode central: Off/Cal
⑲ Réglage de calibrage d'entrée
⑳ Réglage général d'intensité sonore

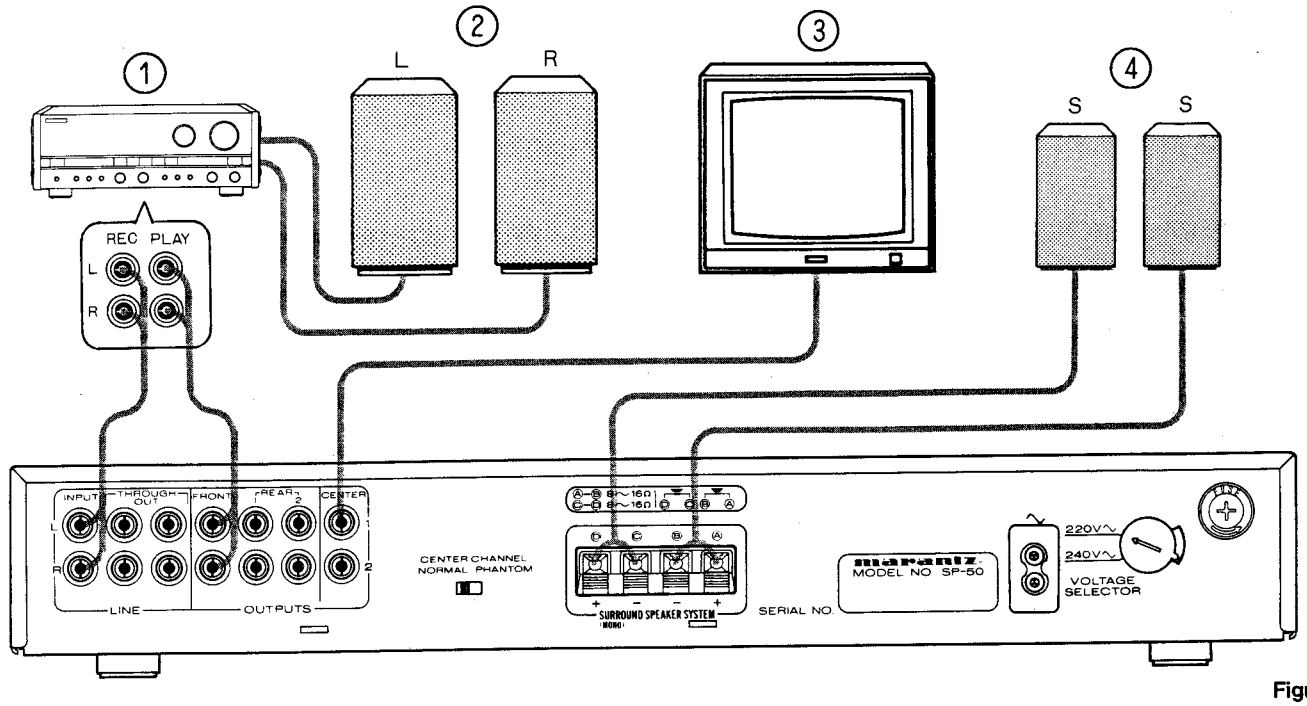
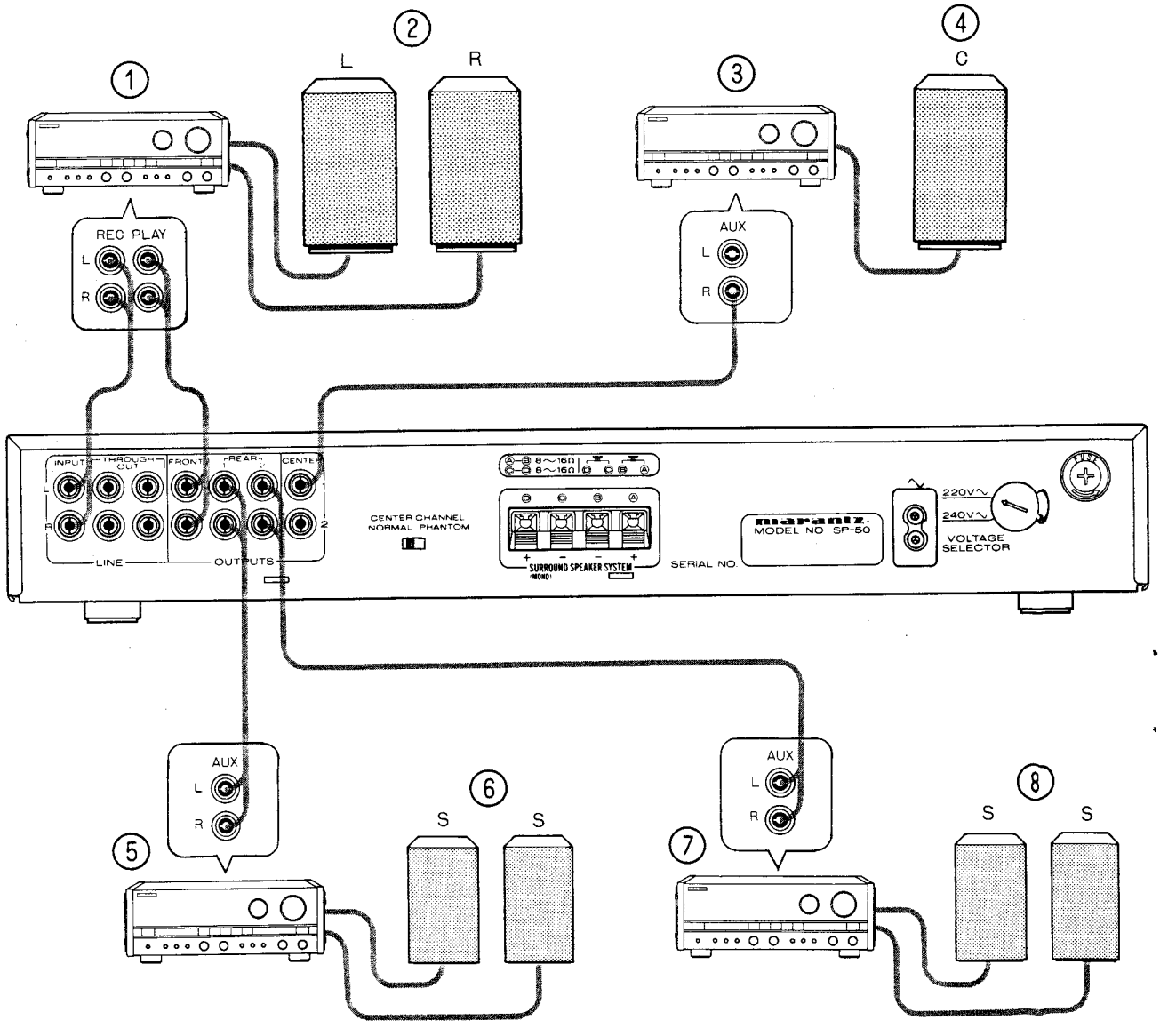


Figure 1



Figure

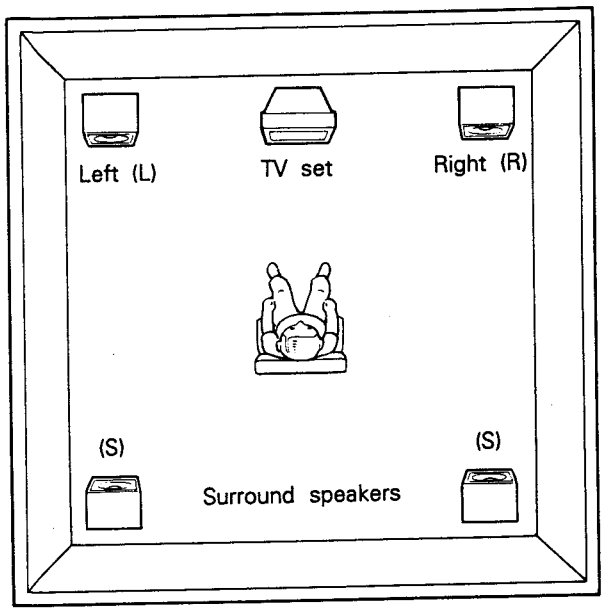


Figure 3

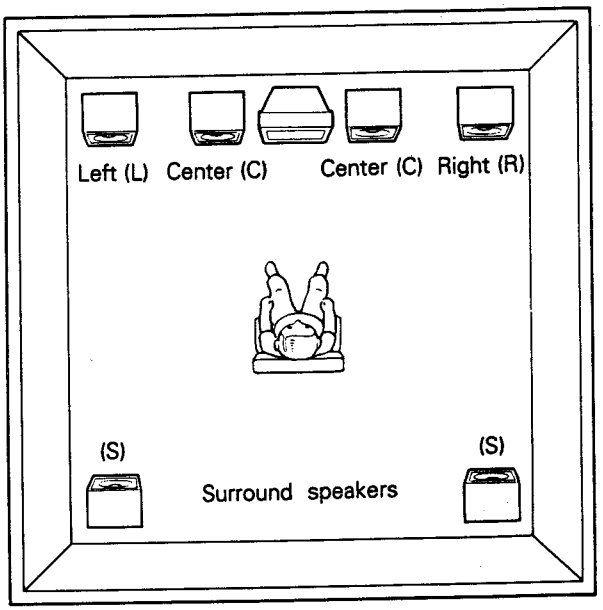
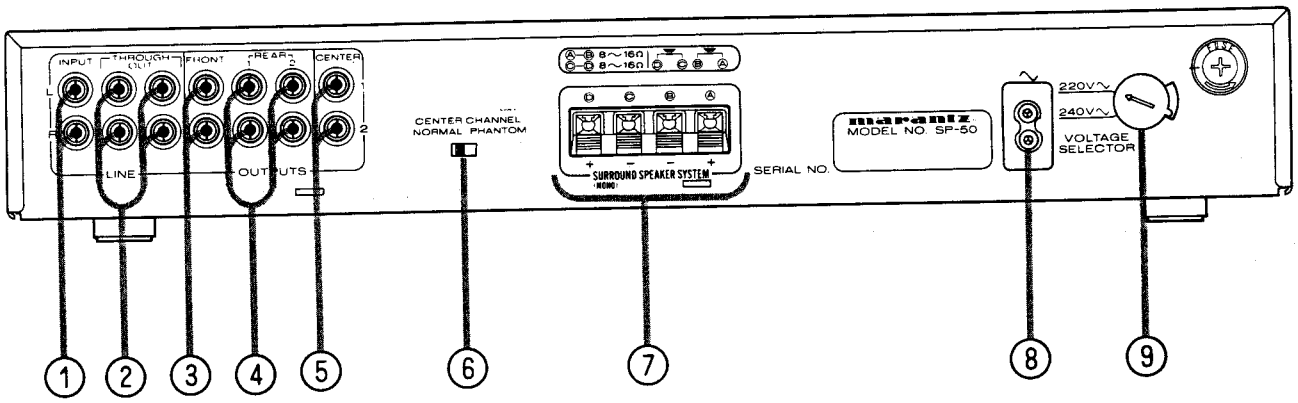
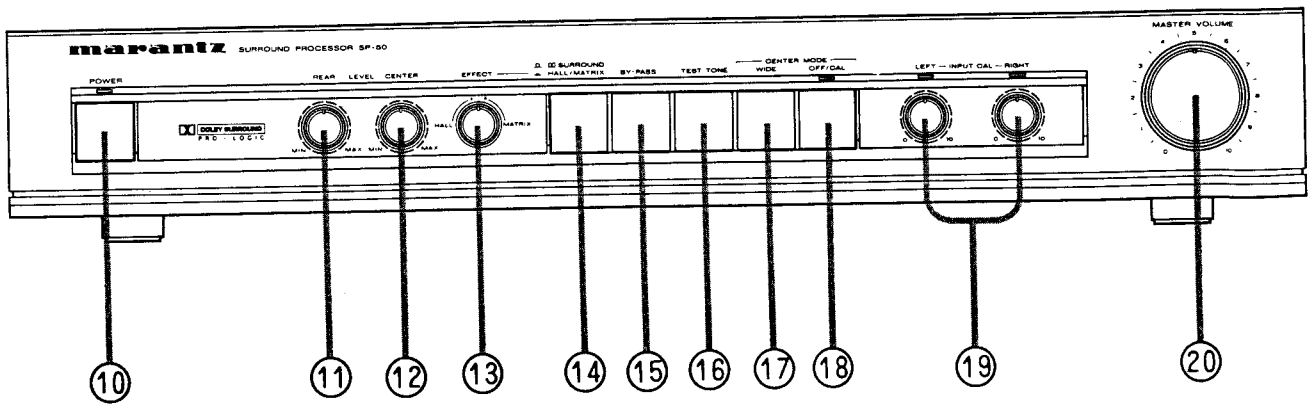


Figure 4





Figure